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ABSTRACT

The United States Training and Employment Service General Aptitude Test Battery (GATB), first published in 1947, has been included in a continuing program of research to validate the tests against success in many different occupations. The GATB consists of 12 tests which measure nine aptitudes: General Learning Ability; Verbal Aptitude; Numerical Aptitude; Spatial Aptitide; Form Perception; Clerical Perception; Motor Coordination; Finger Dexterity; and Manual Dexterity. The aptitude scores are standard scores with 100 as the average for the general working population, and a standard deviation of 20. Occupational norms are established in terms of minimum qualifying scores for each of the significant aptitude measures which, when combined, predict job performance. Cutting scores are set only for those aptitudes which aid in predicting the performance of the job duties of the experimental sample. The GATB norms described are appropriate only for jobs with content similar to that shown in the job description presented in this report. A description of the validation sample and a personnel evaluation form are also included. (AG)

ED 060080

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June 1970

U.S. Training and Employment Service
Technical Report
S-40R

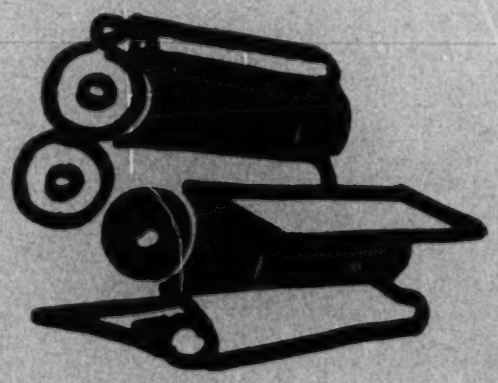
Development of USTES

APTITUDE TEST BATTERY FOR

SELECTED PRESS MAN OCCUPATIONS

(print.& pub.)
651.782

U.S. DEPARTMENT OF LABOR
Manpower Administration



TM 001 230

Technical Report on Development of USTES Aptitude Test Battery

For . . . . . .

Cylinder Press Man (print. & pub.) 651.782
Embossing-Press Operator (print. & pub.) 659.782
Engraving-Press Operator (print. & pub.) 651.782
Offset-Press Man (print. & pub.) 651.782
Overlay Cutter (print. & pub.) 651.381
Platen-Press Man (print. & pub.) 651.782
Web-Press Man (print. & pub.) 651.782

(Developed in Cooperation with the Michigan, New York, Tennessee and Wisconsin State Employment Services)

U.S. Department of Labor
Manpower Administration

June 1970

FOREWORD

The United States Training and Employment Service General Aptitude Test Battery (GATB) was first published in 1947. Since that time the GATB has been included in a continuing program of research to validate the tests against success in many different occupations. Because of its extensive research base the GATB has come to be recognized as the best validated multiple aptitude test battery in existence for use in vocational guidance.

The GATB consists of 12 tests which measure 9 aptitudes: General Learning Ability, Verbal Aptitude, Numerical Aptitude, Spatial Aptitude, Form Perception, Clerical Perception, Motor Coordination, Finger Dexterity, and Manual Dexterity. The aptitude scores are standard scores with 100 as the average for the general working population, with a standard deviation of 20.

Occupational norms are established in terms of minimum qualifying scores for each of the significant aptitude measures which, in combination, predict job performance. For any given occupation, cutting scores are set only for those aptitudes which contribute to the prediction of performance of the job duties of the experimental sample. It is important to recognize that another job might have the same job title but the job content might not be similar. The GATB norms described in this report are appropriate for use only for jobs with content similar to that shown in the job description included in this report.

GATB Study # 748, 774, 2087, 2120

DEVELOPMENT OF USTES APTITUDE TEST BATTERY

For

Cylinder Press Man (print. & pub.) 651.782-010
Embossing-Press Operator (print. & pub.) 659.782 -022
Engraving-Press Operator (print. & pub.) 651.782-018
Offset-Press Man (print. & pub.) 651.782-042
Overlay Cutter (print. & pub.) 651.381-010
Platen-Press Man (print. & pub.) 651.782-054
Web-Press Man (print. & pub.) 651.782-094

S-40R

This report describes research undertaken for the purpose of developing General Aptitude Test Battery (GATB) norms for the occupations of Cylinder Press Man (print. & pub.) 651.782-010, Embossing-Press Operator (print. & pub.) 651.782-022, Engraving-Press Operator (print. & pub.) 651.782-018, Offset-Press Man (print. & pub.) 651.782-042. Overlay Cutter (print. & pub.) 651.381-010. Platen-Press Man (print. & pub.) 651.782-054, Wed-Press Man (print. & pub.) 651.782-094. The following norms were established:

GATB Aptitudes	Minimum Acceptable GATB Scores
N - Numerical Aptitude	85
S - Spatial Aptitude	85
P - Form Perception	85

RESEARCH SUMMARY

Sample:

112 journeyman pressmen employed in Tennessee. This study was conducted prior to the requirement of providing minority group information. Therefore, minority group status is unknown.

Criterion:

Supervisory ratings.

Design:

Concurrent (test and criterion data were collected at approximately the same time).

Minimum aptitude requirements were determined on the basis of a job analysis and statistical analyses of aptitude mean scores, aptitude-criterion correlations and selective efficiencies.

Concurrent Validity:

Phi coefficient = .26 ($P/2 < .005$)

Effectiveness of Norms:

Only 63% of the nontest-selected workers used for this study were good workers; if the workers had been test-selected with the above norms, 75% would have been good workers. 37% of the nontest-selected workers used for this study were poor workers; if the workers had been test-selected with the above norms, only 25% would have been poor workers. The effectiveness of the norms is shown graphically in Table 1:

TABLE 1

Effectiveness of Norms

	Without Tests	With Tests
Good Workers	63%	75%
Poor Workers	37%	25%

SAMPLE DESCRIPTION

Size: N = 112

Occupational Status: Employed workers.

Work Setting: Workers were employed at four companies as follows:

Establishment	Location	Number Tested
Baird-Ward Printing Co.	Nashville, Tennessee	24
McQuiddy Printing Co.	Nashville, Tennessee	7
Methodist Publishing House	Nashville, Tennessee	44
Kingsport Press	Kingsport, Tennessee	37
Total		112

Of the 112 journeymen in the sample, 59 were classified as Cylinder Pressmen, 30 as Rotary Pressmen (corresponds to Web-Press Man), and 23 as Job Pressmen (corresponds to Cylinder-Press Man).

Employer Selection Requirements:

Education: None required.

Previous Experience: None required.

Tests: None used.

Other: Personal interview.

Principal Activities: The job duties for each worker are comparable to those shown in the job description in the Appendix.

Minimum Experience: All workers in the final sample had at least 41 months job experience.

TABLE 2

Means, Standard Deviation (SD), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for Age, Education, and Experience

	Mean	SD	Range	r
Age (years)	35.6	8.1	20-67	-.209*
Education (years)	10.3	1.8	6-15	.083
Experience (months)	160.4	97.5	41-575	-.080

*Significant at the .05 level.

EXPERIMENTAL TEST BATTERY

All 12 tests of the GATB, B-1002A, were administered during the period April 1954 to June 1955.

CRITERION

The criterion data consisted of supervisory ratings of job proficiency made at approximately the same time as the tests were administered by the foreman and the assistant foreman. When one supervisor made both ratings, the ratings were separated by a two-week interval.

Rating Scale:

Form SP-21 "Descriptive Rating Scale" was used. The scale (see Appendix) consists of nine items covering different aspects of job performance. Each item has five alternative responses corresponding to different degrees of job proficiency.

Reliability:

A reliability coefficient of .80 was obtained between the two ratings, indicating a significant relationship. The final criterion score consists of the combined scores of the two ratings.

Criterion Score Distribution:

Possible Range:	18-90
Actual Range:	29-81
Mean:	57.3
Standard Deviation:	10.0

Criterion Dichotomy:

The criterion distribution was dichotomized into low and high groups by placing 37% of the sample in the low group to correspond with the percentage of workers considered unsatisfactory or marginal. Workers in the high criterion group were designated as "good workers" and those in the low group as "poor workers." The criterion critical score is 54.

APTITUDES CONSIDERED FOR INCLUSION IN THE NORMS

Aptitudes were selected for tryout in the norms on the basis of a qualitative analysis of job duties involved and a statistical analysis of test and criterion data. Aptitude M, which does not have a high correlation with the criterion, was considered for inclusion in the norms because the qualitative analysis indicated that the aptitude might be important for the job duties and the sample had a relatively high mean score on this aptitude. Tables 3, 4, and 5 show the results of the qualitative and statistical analyses.

TABLE 3

Qualitative Analysis
(Based on the job analysis, the aptitudes indicated appear to be important to the work performed)

Aptitude	Rationale
G - General Learning Ability	Required to understand the principles of the work involved and to make proper judgments in adjusting and running the presses.
S - Spatial Aptitude	Required for proper insertion of plates and minor adjustments to machine, and for visualizing the relationships of all parts of the press.
P - Form Perception	Required to determine irregularities in the print and proper release of ink; to examine type to determine if it is placed correctly in the press and to position it so that the form is in alignment; to examine proof sheets at delivery end of press and to make comparisons between lithographic plates and proofs.
M - Manual Dexterity	Required in adjusting parts of the press such as removing ink from rollers, readjusting feeders and adding more ink or water, and in handling tools to make adjustments; in lubricating press and inserting plates in the machine; in setting sheets in gage pins for embossing and removing and stacking plates as embossed; in removing stacked sheets from delivery boards of presses.

TABLE 4

Means, Standard Deviations (SD), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for the Aptitudes of the GATB

N = 112

Aptitudes	Mean	SD	Range	r
G - General Learning Ability	96.6	14.7	61-129	.280**
V - Verbal Aptitude	94.6	13.4	66-135	.089
N - Numerical Aptitude	94.6	14.7	43-134	.294**
S - Spatial Aptitude	96.0	18.6	58-137	.242*
P - Form Perception	95.4	14.8	41-137	.234*
Q - Clerical Perception	94.1	11.2	60-143	.097
K - Motor Coordination	93.7	17.4	51-146	.003
F - Finger Dexterity	93.8	18.8	26-141	-.105
M - Manual Dexterity	102.1	19.0	41-140	-.104

*Significant at the .05 level.
**Significant at the .01 level.

TABLE 5

Summary of Qualitative and Quantitative Data

Type of Evidence	Aptitudes								
	G	V	N	S	P	Q	K	F	M
Job Analysis Data: Important	X			X	X				X
Irrelevant									
Relatively High Mean	X			X	X				X
Relatively Low Standard Deviation	X	X	X			X			
Significant Correlation with Criterion	X		X	X	X				
Aptitudes to be Considered for Trial Norms	G		N	S	P				M

DERIVATION AND VALIDITY OF NORMS

Final norms were derived on the basis of the degree to which trial norms consisting of various combinations of aptitudes G, N, S, P, and M at trial cutting scores were able to differentiate between the 63% of the sample considered to be good workers and the 37% of the sample considered to be poor workers. Trial cutting scores at five-point intervals approximately one standard deviation below the mean are tried because this will eliminate about one-third of the sample with three-aptitude norms. For four-aptitude trial norms, cutting scores of slightly less than one standard deviation below the mean will eliminate about one-third of the sample; for two-aptitude trial norms, minimum cutting scores of slightly more than one standard deviation below the mean will eliminate about one-third of the sample. Norms of N-85, S-85, and P-85 provided optimum differentiation for the occupations of Cylinder Press Man (print. & pub.) 651.782-010, Embossing-Press Operator (print. & pub.) 659.782-022, Engraving-Press Operator (print. & pub.) 651.782-018, Offset-Press Man (print. & pub.) 651.782-042, Overlay Cutter (print. & pub.) 651.381-010, Platen-Press Man (print. & pub.) 651.782-054, and Web-Press Man (print. & pub.) 651.782-094. The validity of these norms is shown in Table 6 and is indicated by a phi coefficient of .26 (statistically significant at the .005 level).

TABLE 6

Concurrent Validity of Test Norms
N-85, S-85 and P-85

	Nonqualifying Test Scores	Qualifying Test Scores	Total
Good Workers	23	48	71
Poor Workers	25	16	41
Total	48	64	112

Phi coefficient (ϕ) = .26 Chi square (X^2_y) = 7.5
Significance Level = $P/2 < .005$

DETERMINATION OF OCCUPATIONAL APTITUDE PATTERN

The data for this study met the requirements for incorporating the occupation studied into OAP-34 which is shown in the 1970 edition of Section II of the Manual for the General Aptitude Test Battery. A phi coefficient of .28 is obtained with the OAP-34 norms of N-90, S-95 and P-90.

CHECK STUDY RESEARCH SUMMARY SHEET FOR S-40R

S-40R

GATB Study #748

Check Study #1 Research Summary

Sample:

48 male applicants for employment as Cylinder Press Man at the Marathon Corporation, Menasha, Wisconsin. This study was conducted prior to the requirement of providing minority group status. Therefore, minority group composition is unknown.

TABLE 7

Means, Standard Deviations (SD), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for Age, Education and Aptitudes of the GATB[1] N = 48

	Mean	SD	Range	r
Age (years)	22.7	3.9	18-36	-.076
Education (years)	11.6	1.0	10-15	.355*
G - General Learning Ability	106	17	67-140	.473**
V - Verbal Aptitude	99	16	69-137	.509**
N - Numerical Aptitude	105	15	58-136	.473**
S - Spatial Aptitude	114	19	72-153	.194
P - Form Perception	110	14	80-140	.458**
Q - Clerical Perception	99	14	59-132	.616**
K - Motor Coordination	99	19	58-160	.424**
F - Finger Dexterity	102	17	60-145	.106
M - Manual Dexterity	113	22	55-168	.338*

*Significant at the .05 level
**Significant at the .01 level

[1]B-1001 scores were converted to equivalent B-1002 scores.

Criterion:

Supervisory rating.

Design:

Predictive (test data were collected at the time of hiring and criterion data were collected after two months of experience in 1950).

Concurrent Validity:

Phi coefficient = .35 ($P/2 < .01$).

Effectiveness of Norms:

Only 73% of the nontest-selected workers used for this study were good workers; if the workers had been test-selected with the S-40R norms, 80% would have been good workers. 27% of the nontest-selected workers used for this study were poor workers; if the workers had been test-selected with the S-40R norms, only 20% would have been poor workers. The effectiveness of the norms when applied to this independent sample is shown graphically in Table 8.

TABLE 8

Effectiveness of S-40R Norms
on Check Study Sample #1

	Without Tests	With Tests
Good Workers	73%	80%
Poor Workers	27%	20%

TABLE 9

Concurrent Validity of S-40R Norms
on Check Study Sample #1

	Nonqualifying Test Scores	Qualifying Test Scores	Total
Good Workers	1	34	35
Poor Workers	5	8	13
Total	6	42	48

Phi coefficient (ϕ) = .35 Chi square (X^2_y) = 5.7
Significance Level = $P/2 < .01$

CHECK STUDY RESEARCH SUMMARY SHEET FOR S-40R

S-40R GATB Study #774

Check Study #2 Research Summary

Sample:

32 workers employed as Web-Press Men by the Detroit News, Detroit Times and Detroit Free Press, Detroit, Michigan. This study was conducted prior to the requirement of providing minority group status. Therefore, minority group composition is unknown.

TABLE 10

Means, Standard Deviations (SD), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for Age, Education, Experience and Aptitudes of the GATB; N=32

	Mean	SD	Range	r
Age (years)	35.6	6.1	24-45	.114
Education (years)	10.6	1.4	8-13	.493**
Experience (months)	84.1	89.2	5-300	.020
G - General Learning Ability	104	16	77-145	.460**
V - Verbal Aptitude	104	16	73-131	.382*
N - Numerical Aptitude	100	14	72-134	.459**
S - Spatial Aptitude	107	17	77-142	.502**
P - Form Perception	99	14	69-142	.363*
Q - Clerical Perception	93	10	74-115	.289
K - Motor Coordination	90	16	50-122	.024
F - Finger Dexterity	85	20	47-128	.030
M - Manual Dexterity	95	14	50-118	.249

*Significant at the .05 level
**Significant at the .01 level

Criterion:

Supervisory ratings.

Design:

Concurrent (test and criterion data were collected at approximately the same time). Criterion data were collected in 1953.

Concurrent Validity:

Phi coefficient = .37 (P/2<.025)

Effectiveness of Norms:

Only 56% of the nontest-selected workers used for this study were good workers; if the workers had been test-selected with the S-40R norms, 78% would have been good workers. 44% of the nontest-selected workers used for this study were poor workers; if the workers had been test-selected with the S-40R norms, only 32% would have been poor workers. The effectiveness of the norms when applied to this independent sample is shown graphically in Table 11.

TABLE 11

Effectiveness of S-40R Norms
on Check Study Sample # 2

	Without Tests	With Tests
Good Workers	56%	68%
Poor Workers	44%	32%

TABLE 12

Concurrent Validity of S-40R Norms
on Check Study Sample # 2

	Nonqualifying Test Scores	Qualifying Test Scores	Total
Good Workers	1	17	18
Poor Workers	6	8	14
Total	7	25	32

Phi coefficient (ϕ) = .37 Chi square (X^2_y) = 4.4
Significance Level = P/2 .025

CHECK STUDY RESEARCH SUMMARY SHEET FOR S-40R

S-40R GATB Study #2087

Check Study #3 Research Summary

Sample:

50 male apprentices in the School for Printing Press-men of the New York School of Printing. This study was conducted prior to the requirement of providing minority group status. Therefore, minority group composition is unknown.

TABLE 13

Means, Standard Deviations (SD), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for Age, Education and Aptitudes of the GATB. N = 50

	Mean	SD	Range	r
Age (years)	33.8	6.8	24-57	-.266
Education (years)	10.4	1.7	6-12	.413**
G - General Learning Ability	99.5	14.8	67-145	.357*
V - Verbal Aptitude	100.7	18.1	66-156	.380**
N - Numerical Aptitude	99.0	12.9	75-130	.276
S - Spatial Aptitude	96.0	17.5	65-130	.349*
P - Form Perception	98.2	13.4	77-138	.483**
Q - Clerical Perception	99.9	13.7	77-131	.213
K - Motor Coordination	102.6	15.8	66-140	.013
F - Finger Dexterity	103.5	19.1	53-147	.487**
M - Manual Dexterity	116.4	18.3	63-161	.079

*Significant at the .05 level
**Significant at the .01 level

Criterion:

Supervisory rating.

Design:

Concurrent (test and criterion data were collected at approximately the same time). Criterion data were collected in 1955.

Concurrent Validity:

Phi coefficient = .18 ($P/2 < .10$)

Effectiveness of Norms:

Only 68% of the nontest-selected workers used for this study were good workers; if the workers had been test-selected with the S-40R norms, 77% would have been good workers. 32% of the nontest-selected workers used for this study were poor workers; if the workers had been test-selected with the S-40R norms, only 23% would have been poor workers. The effectiveness of the norms when applied to this independent sample is shown graphically in Table 14.

TABLE 14

Effectiveness of S-40R Norms
on Check Study Sample #3

	Without Tests	With Tests
Good Workers	68%	77%
Poor Workers	32%	23%

TABLE 15

Concurrent Validity of S-40R Norms
on Check Study Sample #3

	Nonqualifying Test Scores	Qualifying Test Scores	Total
Good Workers	11	23	34
Poor Workers	9	7	16
Total	20	30	50

Phi coefficient (ϕ) = .18 Chi square (X^2_y) = 1.7
Significance Level = $P/2 < .10$

CHECK STUDY RESEARCH SUMMARY SHEET FOR S-40R

S-40R GATB Study #2120

Check Study #4 Research Summary

Sample:

51 male pressmen employed by Baird-Ward Printing Company, Methodist Publishing House and McQuiddy Printing Company, Nashville, Tennessee. This study was conducted prior to the requirement of providing minority group status. Therefore, minority group composition is unknown.

TABLE 16

Means, Standard Deviations (SD), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for Age, Education, Experience, and Aptitudes of the GATB; N = 51

	Mean	SD	Range	r
Age (years)	30.4	5.6	19-41	-.249
Education (years)	10.2	1.7	7-14	.074
Experience (months)	72.9	39.4	7-142	.126
G - General Learning Ability	93.3	11.9	69-119	.445**
V - Verbal Aptitude	91.6	11.9	72-117	.168
N - Numerical Aptitude	91.1	14.5	61-119	.430**
S - Spatial Aptitude	92.9	15.4	58-120	.337*
P - Form Perception	90.2	17.0	69-132	.528**
Q - Clerical Perception	91.0	13.8	62-125	.414**
K - Motor Coordination	90.6	15.6	51-120	.257
F - Finger Dexterity	90.6	17.8	50-141	.241
M - Manual Dexterity	101.3	15.2	75-123	

*Significant at the .05 level

**Significant at the .01 level

Criterion:

Supervisory rating.

Design:

Concurrent (test and criterion data were collected at approximately the same time). The criterion data were collected in 1956.

Concurrent Validity:

Phi coefficient = .38 ($P/2 < .005$)

Effectiveness of Norms:

Only 40% of the nontest-selected workers used for this study were good workers; if the workers had been test-selected with the S-40R norms, 65% would have been good workers. 60% of the nontest-selected workers used for this study were poor workers; if the workers had been test-selected with the S-40R norms, only 35% would have been poor workers. The effectiveness of the norms when applied to this independent sample is shown graphically in Table 17.

TABLE 17

Effectiveness of S-40R Norms
on Check Study Sample #4

	Without Tests	With Tests
Good Workers	40%	65%
Poor Workers	60%	35%

TABLE 18

Concurrent Validity of S-40R Norms
on Check Study Sample #4

	Nonqualifying Test Scores	Qualifying Test Scores	Total
Good Workers	7	13	20
Poor Workers	24	7	31
Total	31	20	51

Phi coefficient (ϕ) = .38 Chi square (X^2_y) = 7.5
Significance Level = $P/2 < .005$

SP-21

A-P-P-E-N-D-I-X

DESCRIPTIVE RATING SCALE
(For Aptitude Test Development Studies)

Score____

RATING SCALE FOR _____
D. O. T. Title and Code

Directions: Please read Form SP-20, "Suggestions to Raters", and then fill in the items listed below. In making your ratings, only <u>one</u> box should be checked for each question.

Name of Worker (print) _____
(Last) (First)

Sex: Male_____ Female_____

Company Job Title: _____

How often do you see this worker in a work situation?

☐ **See him at work all the time.**

☐ **See him at work several times a day.**

☐ **See him at work several times a week.**

☐ **Seldom see him in work situation.**

How long have you worked with him?

☐ **Under one month.**

☐ **One to two months.**

☐ **Three to five months.**

☐ **Six months or more.**

A. How much work can he get done? (Worker's ability to make efficient use of his time and to work at high speed.)

▱ 1. Capable of very low work output. Can perform only at an unsatisfactory pace.

▱ 2. Capable of low work output. Can perform at a slow pace.

▱ 3. Capable of fair work output. Can perform at an acceptable but not a fast pace.

▱ 4. Capable of high work output. Can perform at a fast pace.

▱ 5. Capable of very high work output. Can perform at an unusually fast pace.

B. How good is the quality of his work? (Worker's ability to do high-grade work which meets quality standards.)

▱ 1. Performance is inferior and almost never meets minimum quality standards.

▱ 2. The grade of his work could stand improvement. Performance is usually acceptable but somewhat inferior in quality.

▱ 3. Performance is acceptable but usually not superior in quality.

▱ 4. Performance is usually superior in quality.

▱ 5. Performance is almost always of the highest quality.

C. How accurate is he in his work? (Worker's ability to avoid making mistakes.)

▱ 1. Makes very many mistakes. Work needs constant checking.

▱ 2. Makes frequent mistakes. Work needs more checking than is desirable.

▱ 3. Makes mistakes occasionally. Work needs only normal checking.

▱ 4. Makes few mistakes. Work seldom needs checking.

▱ 5. Rarely makes a mistake. Work almost never needs checking.

D. How much does he know about his job? (Worker's understanding of the principles, equipment, materials and methods that have to do directly or indirectly with his work.)

☐ 1. Has very limited knowledge. Does not know enough to do his job adequately.

☐ 2. Has little knowledge. Knows enough to "get by."

☐ 3. Has moderate amount of knowledge. Knows enough to do fair work.

☐ 4. Has broad knowledge. Knows enough to do good work.

☐ 5. Has complete knowledge. Knows his job thoroughly.

E. How much aptitude or facility does he have for this kind of work? (Worker's adeptness or knack for performing his job easily and well.)

☐ 1. Has great difficulty doing his job. Not at all suited to this kind of work.

☐ 2. Usually has some difficulty doing his job. Not too well suited to this kind of work.

☐ 3. Does his job without too much difficulty. Fairly well suited to this kind of work.

☐ 4. Usually does his job without difficulty. Well suited to this kind of work.

☐ 5. Does his job with great ease. Exceptionally well suited for this kind of work.

F. How large a variety of job duties can he perform efficiently? (Worker's ability to handle several different operations in his work.)

☐ 1. Cannot perform different operations adequately.

☐ 2. Can perform a limited number of different operations efficiently.

☐ 3. Can perform several different operations with reasonable efficiency.

☐ 4. Can perform many different operations efficiently.

☐ 5. Can perform an unusually large variety of different operations efficiently.

G. How resourceful is he when something different comes up or something out of the ordinary occurs? (Worker's ability to apply what he already knows to a new situation.)

☐ 1. Almost never is able to figure out what to do. Needs help on even minor problems.

☐ 2. Often has difficulty handling new situations. Needs help on all but simple problems.

☐ 3. Sometimes knows what to do, sometimes doesn't. Can deal with problems that are not too complex.

☐ 4. Usually able to handle new situations. Needs help on only complex problems.

☐ 5. Practically always figures out what to do himself. Rarely needs help, even on complex problems.

H. How many practical suggestions does he make for doing things in better ways? (Worker's ability to improve work methods.)

☐ 1. Sticks strictly with the routine. Contributes nothing in the way of practical suggestions.

☐ 2. Slow to see new ways to improve methods. Contributes few practical suggestions.

☐ 3. Neither quick nor slow to see new ways to improve methods. Contributes some practical suggestions.

☐ 4. Quick to see new ways to improve methods. Contributes more than his share of practical suggestions.

☐ 5. Extremely alert to see new ways to improve methods. Contributes an unusually large number of practical suggestions.

I. Considering all the factors already rated, and only these factors, how acceptable is his work? (Worker's "all-around" ability to do his job.)

☐ 1. Would be better off without him. Performance usually not acceptable.

☐ 2. Of limited value to the organization. Performance somewhat inferior.

☐ 3. A fairly proficient worker. Performance generally acceptable.

☐ 4. A valuable worker. Performance usually superior.

☐ 5. An unusually competent worker. Performance almost always top notch.

June 1970 S-40R

FACT SHEET

Job Titles

Cylinder-Press Man (print. & pub.) 651.782-010
Embossing-Press Operator (print. & pub.) 659.782-022
Engraving-Press Operator (print. & pub.) 651.782-018
Offset-Pressman (print. & pub.) 651.782-042
Overlay Cutter (print. & pub.) 651.381-010
Platen-Press Man (print. & pub.) 651.782-054
Web-Press Man (print. & pub.) 651.782-094

Job Summary

Sets up and/or operates cylinder, offset, platen, or other type printing press to pr oduce copies of designs or lettering by transferring ink or pigment from type, plates, or rolls to paper or similar materials.

Work Performed

Cylinder-Press Man: Reads job order specifications to ascertain size, color, and quality of paper and color of ink. Removes ink plate, fountain, and inking rollers, cleans them with solvent, and replaces them in press, using handtools. Fills ink fountain and turns screws to regulate flow of ink. Packs impression cylinder with tissue paper and tympan to increase printing pressure. Alines and locks form (type setup or plate) on bed of press. Starts press and examines proofsheet to determine off-level areas, color register, and variations in ink volume. Adjusts inking fountain, paper guides, and jogger, and repacks cylinder with overlay to equalize off-level areas. Removes stacked printed sheets from delivery board. Mixes inks to match colors specified by customers. Occasionally dismantles press, lubricates moving parts, and replaces worn parts, using handtools.

Embossing-Press Operator: Installs and locks embossed plate in chase and locks chase in press bed. Mixes embossing composition to putty-like consistency, spreads glue on platen, and applies thin pad of composition over glue. Makes impression of embossing to desired depth in composition, trimming off glue excess before composition hardens. Scrapes high spots on counter die (impressed composition) to prevent it from puncturing paper. Starts press, inserts sheets singly in gage pins, and removes and stacks embossed sheets.

Engraving-Press Operator: Installs and locks engraving die and inking rollers in press. Cuts out and fastens paper template to press bed to maintain flatness of finished cards or sheets. Inserts and adjusts roll of wiping paper that cleans

die between impressions. Thins ink to desired consistency and fills ink fountain. Starts press, examines proof copy, and adjusts press and ink fountain to obtain uniform indentation and color registration. Feeds cards or sheets onto bed of press.

Off-set Pressman: Removes stains from back of lithographic plate with gasoline, pumice, or knife blade. Coats face of plate with gum arabic solution to cover abrasions and non-image portions, and washes it with asphaltum solution to make image sections more ink-attracting. Builds up back of plate with folio to raise plate to printing level, and installs and locks plate on plate cylinder. Fills ink fountain and adjusts space between blanket and impression cylinders according to thickness of paper stock. Adjusts rollers that apply moisture to plate to maintain ink-resistance of non-image portions. Starts press, examines proof copy, and adjusts controls to obtain specified color registration. Reruns stock sheets through press to produce multicolor work, changing plate and ink for each rerun. May photograph and develop subject matter on sensitized plates and etch photographed plates.

Overlay Cutter: Examines base proofsheet to determine pressures required on press roller to reproduce various shades or tones of halftone cuts. Cuts identical sections from proofsheets, using knife, and applies paste to cut sections. Presses sections together over identical areas on base proofsheet to provide different pressure areas on press roller.

Platen-Press Man: Inserts and locks type setup or plate in press bed, using wrench. Adjusts inking rollers and thumbscrews on fountain to regulate flow and obtain even distribution of ink. Starts press and inserts and removes stock sheets singly against gage pins of press. Observes printed stock and adjusts controls are required to obtain even impression and specified color registration. May mix several colors of ink to match sample copy, using ink knife.

Web-Press Man: Inserts paper roll (web) on feed shaft of rotary press and threads end of paper over and between press rollers and cylinders. Adjusts friction brake to maintain tension on paper. Inserts and locks plates on printing cylinder, and adjusts compensators (paper guides), folder mechanism, and paper-cutting blades. Fills oil cups and ink fountains and adjusts valves to regulate flow of oil and ink. Starts press, observes printed sheets, and adjusts controls to rectify spacing errors, irregular ink distribution, and faulty cuts or folds. Unlocks plates and replaces them with make-over plates to change editions.

Effectiveness of Norms for Total Sample:

Only 61% of the nontest-selected workers used for this study were good workers; if the workers had been test-selected with the S-40R norms, 75% would have been good workers. 39% of the nontest-selected workers used for this study were poor workers; if these workers had been test-selected with the S-40R norms, only 25% would have been poor workers.

Applicability of S-40R Norms:

The aptitude test battery is applicable to jobs which include a majority of duties described above.

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